

CLAIMS

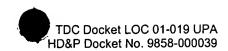
What is claimed is:

1. A pin for use in a connector of a plasma arc apparatus, the pin comprising:

a cylindrical portion disposed at a distal end of the pin; an o-ring groove disposed around the cylindrical portion; and an o-ring removal slot adjoining the o-ring groove,

wherein the o-ring removal slot provides access for removal of an o-ring disposed within the o-ring groove.

- 2. The pin of Claim 1, wherein the o-ring groove is recessed within a housing of the connector.
- 3. The pin of Claim 2, wherein the housing is a plug housing connected to a torch lead of the plasma arc cutting apparatus.
- 4. The pin of Claim 1, wherein the o-ring removal slot is approximately perpendicular to the o-ring groove.
- 5. The pin of Claim 1, wherein the o-ring removal slot extends between the distal end of the pin and the o-ring groove.
- 6. The pin of Claim 1, wherein the o-ring removal slot further comprise chamfered edges.
 - 7. The pin of Claim 1 further comprising a plurality of o-ring removal slots.
 - 8. The pin of Claim 1, wherein the pin is a negative lead gas carrying pin.
 - 9. The pin of Claim 1, wherein the pin comprises a brass material.



10. A negative lead gas carrying pin for use in a connector of a plasma arc apparatus, the negative lead gas carrying pin comprising:

a cylindrical portion disposed at a distal end of the negative lead gas carrying pin;

an o-ring groove disposed around the cylindrical portion; and an o-ring removal slot adjoining the o-ring groove,

wherein the o-ring removal slot provides access for removal of an o-ring disposed within the o-ring groove.

- 11. The negative lead gas carrying pin of Claim 10, wherein the o-ring groove is recessed within a housing of the connector.
- 12. The negative lead gas carrying pin of Claim 12, wherein the housing is a plug housing connected to a torch lead of the plasma arc cutting apparatus.
- 13. The negative lead gas carrying pin of Claim 10, wherein the o-ring removal slot is approximately perpendicular to the o-ring groove.
- 14. The negative lead gas carrying pin of Claim 10, wherein the o-ring removal slot extends between the distal end of the negative lead gas carrying pin and the o-ring groove.
- 15. The negative lead gas carrying pin of Claim 10, wherein the o-ring removal slot further comprises chamfered edges.
- 16. The negative lead gas carrying pin of Claim 10 further comprising a plurality of o-ring removal slots.
- 17. The negative lead gas carrying pin of Claim 10, wherein the negative lead gas carrying pin comprises a brass material.

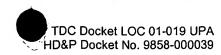


18. A sealing member comprising:

an o-ring groove disposed within the sealing member; and an o-ring removal slot adjoining the o-ring groove,

wherein the o-ring removal slot provides access for removal of an o-ring disposed within the o-ring groove.

- 19. The sealing member of Claim 18 further defining a cylindrical portion disposed at a distal end of the sealing member, wherein the o-ring groove is disposed around the cylindrical portion proximate the distal end.
- 20. The sealing member of Claim 19, wherein the o-ring removal slot extends between the distal end of the sealing member and the o-ring groove.
- 21. The sealing member of Claim 18, wherein the o-ring removal slot further comprises chamfered edges.
- 22. The sealing member of Claim 18, wherein the o-ring groove is recessed within an adjacent sealing member.
- 23. The sealing member of Claim 18, wherein the o-ring groove is disposed around an outer surface of the sealing member.
- 24. The sealing member of Claim 18, wherein the o-ring groove is disposed around an inner surface of the sealing member.
- 25. The sealing member of Claim 18, wherein the o-ring removal slot is approximately perpendicular to the o-ring groove.
- 26. The sealing member of Claim 18 further comprising a plurality of o-ring removal slots.



27. A sealing member comprising:

an o-ring shoulder disposed within the sealing member; and an o-ring removal slot adjoining the o-ring shoulder,

wherein the o-ring removal slot provides access for removal of an o-ring disposed against the o-ring shoulder.

- 28. The sealing member of Claim 27, wherein the o-ring removal slot is approximately perpendicular to the o-ring shoulder.
- 29. The sealing member of Claim 27, wherein the o-ring removal slot further comprises chamfered edges.
- 30. The sealing member of Claim 27, wherein the sealing member is a main power socket for use in a plasma arc cutting apparatus.
- 31. The sealing member of Claim 27 further comprising a plurality of o-ring removal slots.



- 32. A method of removing an o-ring from a sealing member, the method comprising the steps of:
- (a) engaging an o-ring removal tool within an o-ring removal slot of the sealing member;
- (b) advancing the o-ring removal tool along the o-ring removal slot; and
- (c) engaging the o-ring removal tool with the o-ring to remove the o-ring via the o-ring removal slot,

wherein the o-ring removal slot provides improved access for removal of the o-ring.

- 33. The method of Claim 32, wherein the sealing member is a negative lead gas carrying pin for use in a plasma arc cutting apparatus.
- 34. The method of Claim 32, wherein the sealing member is a main power socket for use in a plasma arc cutting apparatus.
- 35. The method of Claim 32 further comprising the step of engaging at least one o-ring removal tool with a plurality of o-ring removal slots.